Work Order ID 89035 L41 *89035*

Tuesday, August 21, 2012 8:41:37 AM

Item ID: D119-646-241 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID:

Item Name: Replacement Skidtube STD w/ Training Wearplates **Stop** *NS2*

Start Date: 8/21/2012 **Start Qty:** 1.00 *1* **Cust Item ID:**

Required Date: 8/28/2012 **Req'd Qty:** 1.00 *1* **Customer:**

Reference:

Approvals: **Process Plan:** MK **Date:** 12-08-21 **Tooling:** ________ **Date:** ________ **Run Start** *NR1*

QC: ________ **Date:** ________ **SPC (Y/N):** ________ **Date:** ________ **Stop** *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp

Draw Nbr	Revision Nbr
D3887	B
IIN-D119-646	B

100 *100* — 0.00 — N/A

DC — Memo — 0.00

Document Control — Photocopy bluefile & type labels per PPP D119-646-241 CHG001

110 *110* — 0.00 — ① SAD 12-08-21

Skidtubes — Memo — 0.00

Skidtubes

1- inspect Mat'L D2500-1-190 for damage

2- Remove 45.3125" from d2500-1-180, deburr ends.

3- Ensure squareness of ends and scribe batch#

DQA: ________ Date: ______________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ______	**DISPOSITION**	**AGAINST DEPARTMENT/PROCESS**			
Part No. ______	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
NCR No. ______	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
	Work Order Update ☐	Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	______	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	______	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	______	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Work Order ID 89035

89035

Tuesday, August 21, 2012 8:41:37 AM

Item ID: D119-646-241 **Accept** *N900040100* **Setup Start** *NS1* **Stop** *NS2*

Revision ID:

Item Name: Replacement Skidtube STD w/ Training Wearplates

Start Date: 8/21/2012 **Start Qty:** 1.00 *1* **Cust Item ID:**

Required Date: 8/28/2012 **Req'd Qty:** 1.00 *1* **Customer:**

Reference:

Run Start *NR1* **Stop** *NR2*

Approvals: **Process Plan:** ________ **Date:** ________ **Tooling:** ________ **Date:** ________

QC: ________ **Date:** ________ **SPC (Y/N):** ________ **Date:** ________

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 Memo	0.00 0.00				1	TB	12-8-21	
121 *121* QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00				1	SAD 12.08.21		
122 *122* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00				DAS 03 89	12-8-21		

DQA: ________ Date: ______________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ______	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
Part No. ______	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
NCR No. ______	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
	Work Order Update ☐	Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause		Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data	☐									
Equip/Tooling	☐									
Operator	☐									
Material	☐									
Setup	☐									
Other	☐									
Process	☐									
Supplier	☐									
Training	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other ______
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	______	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	______	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	______	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Work Order ID 89035 *89035*

Tuesday, August 21, 2012 8:41:37 AM

Item ID: D119-646-241 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID:

Item Name: Replacement Skidtube STD w/ Training Wearplates **Stop** *NS2*

Start Date: 8/21/2012 **Start Qty:** 1.00 *1* **Cust Item ID:**

Required Date: 8/28/2012 **Req'd Qty:** 1.00 *1* **Customer:**

Reference:

Run Start *NR1*

Approvals: **Process Plan:** ______ **Date:** ______ **Tooling:** ______ **Date:** ______

QC: ______ **Date:** ______ **SPC (Y/N):** ______ **Date:** ______

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 *130* Skidtubes		0.00							
Skidtubes	Memo	0.00							

1-Install drill Jig DT9477 drill X-bolt spacer pilot holes using 3/16" drill

2-Open crossbolt spacer holes to finished size as per dwg D3887 (section D-D and E-E) ***DO NOT OPEN FWD Saddles Holes***

3- Deburr, blow out chips from inside of tube.

> BB 12/05/21

4 -Bond web in place as per Dwg D3887 & QSI 015.
A/RSikaflex-291 m 12a443
Sikaflex expire date: 14/03/2013
Start: 5h00 PM Time: 12/08/22
Finish: 11AM Time: 12-8-23
******(Adhere for 12 hours)*******

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: ________ Date: ______________

QA Closed: Date:

Work Order: ______________	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
Part No. ______________	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
NCR No. ______________	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
	Work Order Update ☐	Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	______________	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	______________	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	______________	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Work Order ID 89035
Tuesday, August 21, 2012 8:41:37 AM

89035

Item ID: D119-646-241 **Accept** *N900040100* **Setup Start** *NS1*
Revision ID:
Item Name: Replacement Skidtube STD w/ Training Wearplates **Stop** *NS2*

Start Date: 8/21/2012 **Start Qty:** 1.00 *1* **Cust Item ID:**
Required Date: 8/28/2012 **Req'd Qty:** 1.00 *1* **Customer:**
Reference:

Run Start *NR1*
Stop *NR2*

Approvals: **Process Plan:** ________ **Date:** ________ **Tooling:** ________ **Date:** ________
QC: ________ **Date:** ________ **SPC (Y/N):** ________ **Date:** ________

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
135 *135* QC Quality Control	QC5- Inspect part completeness to step on W/O	0.00							DAS 03 12-8-23 12-8-23
	Memo	0.00							

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ____________________

Part No. ____________________

NCR No. ____________________

DISPOSITION

- Rework ☐
- Scrap ☐
- Use-as-is ☐
- Work Order Update ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause		Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data	☐									
Equip/Tooling	☐									
Operator	☐									
Material	☐									
Setup	☐									
Other	☐									
Process	☐									
Supplier	☐									
Training	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other
☐ Ripples in Bend	☐ Drill Holes	☐ Offset		
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration		
☐ Turning Sequence	☐ Finish	☐ Out of Sequence		
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Work Order ID 89035 *89035*

Tuesday, August 21, 2012 8:41:37 AM

Item ID:	D119-646-241	**Accept**	*N900040100*	**Setup** **Start** *NS1*
Revision ID:				**Stop** *NS2*
Item Name:	Replacement Skidtube STD w/ Training Wearplates			
Start Date:	8/21/2012	**Start Qty:** 1.00 *1*	**Cust Item ID:**	
Required Date:	8/28/2012	**Req'd Qty:** 1.00 *1*	**Customer:**	
Reference:				

Approvals: **Process Plan:** ______ **Date:** ______ **Tooling:** ______ **Date:** ______ **Run** **Start** *NR1*

QC: ______ **Date:** ______ **SPC (Y/N):** ______ **Date:** ______ **Stop** *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140 *140* Skidtubes		0.00				1	Ø		CF 12.8.23
Skidtubes	Memo	0.00							

1- Bend FWD end of tube using bender 1 and bend prog. D3887.***Must use bending aid DT9544, ensure proper positioning***

2- Cut FWD end of tube as per dwg D3887.***Verify measurment***

3- Buff out marks left from bending

4- Drill FWD cap holes using DT8215. Open FWD & AFT cap holes to 0.208"

5- Open FWD saddle holes to finished size as per dwg D3887

6- Drill FWD x-bolt spacer holes to finished size (holes must be laid out manually.) using DT9816.

7- Drill Tow ring hole,holes must be laid out manually . Open to finished size.

8- Deburr and blow out chips from inside of tube.

DQA: ________ Date: ______________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ____________________

Part No. ____________________

NCR No. ____________________

DISPOSITION

- Rework ☐
- Scrap ☐
- Use-as-is ☐
- Work Order Update ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other
☐ Ripples in Bend	☐ Drill Holes	☐ Offset		
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration		
☐ Turning Sequence	☐ Finish	☐ Out of Sequence		
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Item ID: D119-646-241 **Accept** *N900040100* **Setup Start** *NS1*
Revision ID:
Item Name: Replacement Skidtube STD w/ Training Wearplates **Stop** *NS2*
Start Date: 8/21/2012 **Start Qty:** 1.00 *1* **Cust Item ID:**
Required Date: 8/28/2012 **Req'd Qty:** 1.00 *1* **Customer:**
Reference:

Run Start *NR1*
Stop *NR2*

Approvals: **Process Plan:** ________ **Date:** ________ **Tooling:** ________ **Date:** ________
QC: ________ **Date:** ________ **SPC (Y/N):** ________ **Date:** ________

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150 *150* QC Quality Control	QC5- Inspect part completeness to step on W/O	0.00				DAS 03		12-8-23	
	Memo	0.00							
160 *160* Skidtubes Skidtubes		0.00							
	Memo	0.00							

1- Countersink crossbolt spacer holes, and prepare tube for welding, deburr. -> CF 12.8.23

2-Insert crossbolt spacers. Weld as per QSI 004 and Dwg D3887. Remember to back drill each hole before welding the other side. Use aluminum rod
A/RAluminum Rod M122399 BE 12/08/29

3-Grind cross bolt welds flush as per Dwg D3887. Ensure no pin hole. -> CF 12.8.29

4-Counterbore x-bolt spacer holes as per Dwg D3887.

5- Deburr and blow out chips from inside of tube DC 12/08/29

DQA: ________ Date: ______________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ______________

Part No. ______________

NCR No. ______________

DISPOSITION

- [ ] Rework
- [ ] Scrap
- [ ] Use-as-is
- [ ] Work Order Update

AGAINST DEPARTMENT/PROCESS

- [ ] Skid-tube
- [ ] Machining
- [ ] Thermoforming
- [ ] Large Fab
- [ ] Crosstube
- [ ] Small Fab
- [ ] Finishing
- [ ] Composite
- [ ] Water Jet
- [ ] Prod. Eng. Coor.
- [ ] Rec/Store/Packaging
- [ ] Supplier
- [ ] Engineering
- [ ] Quality
- [ ] Other
- [ ]

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data [ ]									
Equip/Tooling [ ]									
Operator [ ]									
Material [ ]									
Setup [ ]									
Other [ ]									
Process [ ]									
Supplier [ ]									
Training [ ]									
Unapproved [ ]									

FAULT CATEGORY

Landing Gear

- [ ] Bending
- [ ] Centre Not Concentric to O/S
- [ ] Cracks
- [ ] Crushed/Crimped
- [ ] Cuffs
- [ ] Heat Treat
- [ ] Inspection Strip in Tube
- [ ] Ripples in Bend
- [ ] Torque Waves in Extrusion
- [ ] Turning Sequence
- [ ] Wave/Twist in Tube

General

- [ ] Bend
- [ ] BOM/Route
- [ ] Broken/Damaged
- [ ] Burrs
- [ ] Contamination
- [ ] Countersink
- [ ] Cut Too Short
- [ ] Drill Holes
- [ ] Drawing
- [ ] Finish
- [ ] Folio
- [ ] Grain
- [ ] Hardware
- [ ] Inspection Incomplete
- [ ] Instructions Incomplete/Unclear
- [ ] Maintenance
- [ ] Mislabeled
- [ ] Misread
- [ ] Offset
- [ ] Out of Calibration
- [ ] Out of Sequence
- [ ] Outside Dimensions
- [ ] Ovalized
- [ ] Over/Under tolerance
- [ ] Part Incorrect
- [ ] Part Lost/Missing
- [ ] Part Moved
- [ ] Positioned Wrong
- [ ] Power Loss/Surge
- [ ] Pressure/Forced
- [ ] Temperature/Cure
- [ ] Weld
- [ ] Wrong Stock Pulled
- [ ] Other ______________

Work Order ID 89035
Tuesday, August 21, 2012 8:41:37 AM

89035

Item ID: D119-646-241
Revision ID:
Item Name: Replacement Skidtube STD w/ Training Wearplates

Accept *N900040100*

Setup Start *NS1*
Stop *NS2*

Start Date: 8/21/2012 **Start Qty:** 1.00 *1*
Required Date: 8/28/2012 **Req'd Qty:** 1.00 *1*
Reference:

Cust Item ID:
Customer:

Approvals: **Process Plan:** ____ **Date:** ____ **Tooling:** ____ **Date:** ____
QC: ____ **Date:** ____ **SPC (Y/N):** ____ **Date:** ____

Run Start *NR1*
Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170 *170* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00	DAS 16 9-89 12/08/30						
180 *180* QC Quality Control	QC10- Inspect visual per QSI004- ground welds Memo	0.00 0.00	DAS 16 9-89 12/08/30						
190 *190* HandFinish Hand Finishing	Pressure Wash per QSI005 4.3 Memo	0.00 0.00				1			12-8-30

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
Work Order: ____________	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
Part No. ____________	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
NCR No. ____________	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
	Work Order Update ☐	Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other ____________
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	____________	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	____________	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	____________	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Work Order ID 89035
Tuesday, August 21, 2012 8:41:37 AM

89035

Item ID: D119-646-241
Revision ID:
Item Name: Replacement Skidtube STD w/ Training Wearplates

Accept *N900040100*

Setup Start *NS1*
Stop *NS2*

Start Date: 8/21/2012 **Start Qty:** 1.00 *1*
Required Date: 8/28/2012 **Req'd Qty:** 1.00 *1*
Reference:

Cust Item ID:
Customer:

Run Start *NR1*
Stop *NR2*

Approvals: **Process Plan:** ______ **Date:** ______ **Tooling:** ______ **Date:** ______
QC: ______ **Date:** ______ **SPC (Y/N):** ______ **Date:** ______

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200 *200* Powdercoat Powder Coating M121841	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00				1X	∅		ML 12/08/30
	Memo START TIME: 10:50 OVEN TEMPERATURE: 320 °F FINISH TIME: 11:20	0.00							
210 *210* QC Quality Control	QC3- Inspect Part Finish	0.00							
	Memo	0.00				1 LH	∅		RL 12/10/15
240 *240* HandFinish Hand Finishing		0.00							
	Memo ✓ 1-Install wearplates as per Dwg D3887. ✓ 2 -Inspect for foreign objects as per QSI 024 ✓ 3 -Install Aft Cap and seal with Sikaflex. Clean excess adhesive. A/R Sikaflex-240/-291 M123023 Sikaflex expire date: 13/01	0.00				1 LH	∅		RL 12/10/15

DQA: ________ Date: ________________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
Work Order: ____________	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
Part No. ____________	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
NCR No. ____________	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
	Work Order Update ☐	Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other ________
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	________	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	________	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	________	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Item ID:	D119-646-241	**Accept**	*N900040100*	**Setup Start**	*NS1*
Revision ID:				**Stop**	*NS2*
Item Name:	Replacement Skidtube STD w/ Training Wearplates				
Start Date:	8/21/2012	**Start Qty:** 1.00	*1*	**Cust Item ID:**	
Required Date:	8/28/2012	**Req'd Qty:** 1.00	*1*	**Customer:**	
Reference:					

Approvals: **Process Plan:** ________ **Date:** ________ **Tooling:** ________ **Date:** ________ **Run Start** *NR1*

QC: ________ **Date:** ________ **SPC (Y/N):** ________ **Date:** ________ **Stop** *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250 *250* QC Quality Control	QC5- Inspect part completeness to step on W/O **Memo**	0.00 0.00 SmB 12/10/17				1			
255 *255* HandFinish Hand Finishing	Wing Walk as per dwg QSI005 4.4 Batch M127560 **Memo**	0.00 0.00				1 hu	ø	JL	12/10/17
256 *256* QC Quality Control	QC3- Inspect Part Finish **Memo**	0.00 0.00 SmB 12/10/17				1			

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ____________ Part No. ____________ NCR No. ____________	**DISPOSITION**	**AGAINST DEPARTMENT/PROCESS**
	Rework ☐ Scrap ☐ Use-as-is ☐ Work Order Update ☐	Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐ ☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other ________
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	________	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	________	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	________	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Work Order ID 89035

Tuesday, August 21, 2012 8:41:37 AM

89035

Item ID: D119-646-241

Accept *N900040100*

Setup Start *NS1*

Stop *NS2*

Revision ID:

Item Name: Replacement Skidtube STD w/ Training Wearplates

Start Date: 8/21/2012 **Start Qty:** 1.00 *1*

Required Date: 8/28/2012 **Req'd Qty:** 1.00 *1*

Cust Item ID:

Customer:

Reference:

Run Start *NR1*

Stop *NR2*

Approvals: **Process Plan:** ________ **Date:** ________ **Tooling:** ________ **Date:** ________

QC: ________ **Date:** ________ **SPC (Y/N):** ________ **Date:** ________

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
260 *260* Packaging Packaging	Identify as per dwg & Stock Location:______ Memo PPP 74791	0.00 0.00				SP	8	12/10/19	
270 *270* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00						12/10/22	[signature]

MF 12-10-19

DQA: ________ Date: ______________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ____________ Part No. ____________ NCR No. ____________	**DISPOSITION** Rework ☐ Scrap ☐ Use-as-is ☐ Work Order Update ☐	**AGAINST DEPARTMENT/PROCESS** Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐ ☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	____________	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	____________	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	____________	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Picklist Print

Tuesday, August 21, 2012 8:41:35 AM

4

Work Order ID: 89035

Parent Item: D119-646-241 **Start Date:** 8/21/2012 **Required Date:** 8/28/2012

Parent Item Name: Replacement Skidtube STD w/ Training Wearplates **Start Qty:** 1.00 **Required Qty:** 1.00

Comments: IPP RevA: New issue DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
NAS1149C0332R Washer		Purchased	No	DAS 12 8-69 Qty (4) 12/10/16		240	Each AK123248 (x4)	4,018.0000	4	4		12/10/15	
				Location		**Loc Qty**	**Loc Code**						
				297		4018							
					122063	4018							
D2500-1-190 Ext'n -'I' Beam Tube 4"		Manufactured	No			110	Each	92.0000	1	1	SAD	12-08-21	
				Location		**Loc Qty**	**Loc Code**						
				HALL		92							
					74777	4							
					80061	7							
					85483	81				(1)			
D3885-1 Standard Web		Manufactured	No			140	Each	10.0000	1	1	SAD	12-08-21	
				Location		**Loc Qty**	**Loc Code**						
				LG		10							
					52421	10				(1)			
D3903-1 Spacer		Manufactured	No			160	Each	22.0000	12	12	BE	12-08-29 B88375 *5	
				Location		**Loc Qty**	**Loc Code**						
				LG001		22							
					78790	22				7			

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ____________ Part No. ____________ NCR No. ____________	**DISPOSITION** Rework ☐ Scrap ☐ Use-as-is ☐ Work Order Update ☐	**AGAINST DEPARTMENT/PROCESS** Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐ ☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	**General**			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other ________
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	________	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	________	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	________	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Work Order ID: **89035**

Parent Item: **D119-646-241** | **Start Date:** 8/21/2012 | **Required Date:** 8/28/2012

Parent Item Name: Replacement Skidtube STD w/ Training Wearplates | **Start Qty:** 1.00 | **Required Qty:** 1.00

Item	Type		Qty	Unit	Cost			
D3681-1 Spacer	Manufactured	No	160	Each	54.0000	**8**	**8**	BE 12/08/29

Location		Loc Qty	Loc Code	
LG		44		
	80361	1		
	85417	43		8
LG001		10		
	68958	2		
	69893	2		
	71845	2		
	74874	1		
	76004	1		
	77501	2		

Item	Type		Qty	Unit	Cost			
D2855-3 Cap	Manufactured	No	240	Each	14.0000	**2** JL	**2**	11-10-15

Location		Loc Qty	Loc Code	
FP002		14		
	52281	5		
	75080	9		X2

Item	Type		Qty	Unit	Cost			
AN3C5A Bolt	Purchased	No	240	Each	913.0000	**4** JL	**4**	11/10/15

Location		Loc Qty	Loc Code	
FP001		7		
	115835	7		
ST350		906	M122800	x4
	116419	28		
	117343	13		
	117764	7		
	117872	2		
	119749	23		
	120423	28		
	121255	27		
	121708	500		
	122141	278		

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ______	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
Part No. ______	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
NCR No. ______	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
	Work Order Update ☐	Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped.	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other ______
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	______	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	______	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	______	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Work Order ID: 89035

Parent Item: D119-646-241 — **Start Date:** 8/21/2012 — **Required Date:** 8/28/2012

Parent Item Name: Replacement Skidtube STD w/ Training Wearplates — **Start Qty:** 1.00 — **Required Qty:** 1.00

Item	Type							
D3904-1 Washer	Manufactured	No	240	Each	113.0000	16	16	Ml 12/10/15

Location		Loc Qty	Loc Code	
ST068		113		
	51875	113		X16

Item	Type							
D3672-1 Phenolic Washer	Manufactured	No	240	Each	1,164.0000	4 Ml	4	12/10/15

Location		Loc Qty	Loc Code	
ST060		1164		
	72229	4		
	76277	13		
	80369	137		
	83608	500		
	85222	510		X4

Item	Type							
D3849-041 FWD WEARPLATE ASSY, STD/FLOAR GEAR	Manufactured	No	240	Each	3.0000	1 Ml	1	12/10/17

Location		Loc Qty	Loc Code	
FP001		3	B90319	X1
	53030	1		
	75089	2		

Item	Type							
D3849-043 AFT WEARPLATE ASSY, STD GEAR	Manufactured	No	240	Each	1.0000	1 Ml	1	12/10/15

Location		Loc Qty	Loc Code	
FP001		1	B90400	X1
	82669	1		

Item	Type							
AN3C46A BOLT	Purchased	No	240	Each	46.0000	8 Ml	8	12/10/15

Location		Loc Qty	Loc Code	
ST354		20		
	122491	20		
ST355		26		
	122204	26	M123116	X8

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ______	**DISPOSITION**	**AGAINST DEPARTMENT/PROCESS**
Part No. ______	Rework ☐	Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
NCR No. ______	Scrap ☐	Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
	Use-as-is ☐	Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
	Work Order Update ☐	Large Fab ☐ Composite ☐ Supplier ☐ ☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other ______
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	______	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	______	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	______	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Picklist Print

Tuesday, August 21, 2012 8:41:36 AM

Work Order ID: 89035

Parent Item: D119-646-241 **Start Date:** 8/21/2012 **Required Date:** 8/28/2012

Parent Item Name: Replacement Skidtube STD w/ Training Wearplates **Start Qty:** 1.00 **Required Qty:** 1.00

MS21043-3 Nut	Purchased	No		240	Each	629.0000	**8**		**8**

Location		Loc Qty	Loc Code
FG		72	
	103691	72	
ST301		557	
	118077	2	
	118614	7	
	118686	30	
	119758	20	
	121255	20	
	121708	478	

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

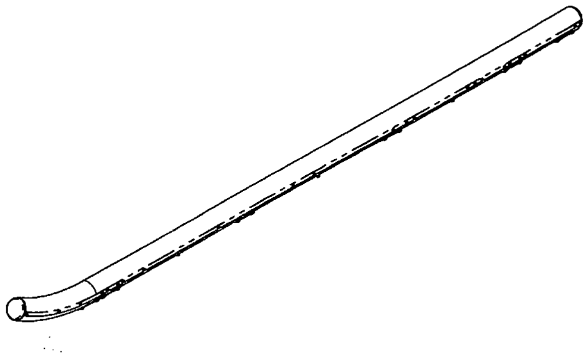
Work Order: ______ Part No. ______ NCR No. ______	**DISPOSITION** Rework ☐ Scrap ☐ Use-as-is ☐ Work Order Update ☐	**AGAINST DEPARTMENT/PROCESS** Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐ ☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped.	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other
☐ Ripples in Bend	☐ Drill Holes	☐ Offset		
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration		
☐ Turning Sequence	☐ Finish	☐ Out of Sequence		
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

ITEM	QTY -041	QTY -043	QTY -045	P/N	DESCRIPTION
1	X			D3887-041	STD SKIDTUBE ASSY WITH WEARPAD
2		X		D3887-043	STD SKIDTUBE ASSY WITH WEARPLATE
3			X	D3887-045	STD SKIDTUBE ASSY WITH TRAINING WEARPLATE
11	2	2	2	D2855-3	CAP
12	16	16		D3492-045	PLUG ASSY
13	4	4	4	D3672-1	PHENOLIC WASHER
14	8	8	8	D3681-1	SPACER
15	5			D3846-1	GASKET
16	1			D3846-11	GASKET
17	5	5		D3847-1	WEARPAD
18	1	1		D3847-11	AFT WEARPAD
19		1		D3847-043	FWD WEARPLATE ASSY
20		1		D3847-045	CENTER WEAPLATE ASSY
21		1		D3847-047	AFT WEARPLATE ASSY
22			1	D3849-041	FWD TRAINING WEARPLATE ASSY
23			1	D3849-043	AFT WEARPLATE ASSY
24	1	1	1	D3885-1	STANDARD WEB
25	1	1		D3887-11	STANDARD SKIDTUBE
26			1	D3887-13	STANDARD SKIDTUBE
27	12	12	12	D3903-1	SPACER
28			16	D3904-1	WASHER
41	30	30		ALS4-1032-130	INSERT
42	34	34	4	AN3C5A	BOLT
43			8 (struck through, circled)	AN3C46A	BOLT
44	34	34	4	NAS1149C0332R	WASHER (OR AN960C10L)
45			8 (struck through, circled)	MS21043-3	NUT



D3887-041 STANDARD SKIDTUBE ASSY WITH WEARPAD (SHOWN)
D3887-043 STANDARD SKIDTUBE ASSY WITH WEAPLATE (SIMILAR)
D3887-045 STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE (SIMILAR)

#89035

RELEASED 09/07/15

NOTES:
1) MATERIAL: N/A
2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3885-1 WEB
POWDER COAT "WHITE" (4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: D3887-041 = 32.0 lbs
D3887-043 = 37.0 lbs
D3887-045 = 38.1 lbs
8) WELD PER DART QSI 004
9) DAMAGE TOLERANCE ON FWD BEND:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 8.5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP 0.020" DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
10) INSERT D3885-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP
11) INSERT D3492-045 PLUG ASSY INTO Ø0.197 HOLES (BOTH SIDES OF TUBE)
12) (B) USE DART DRILL TEMPLATE DT8931 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARPLATE INSERTS. INSTALL AELS-1032-130 INTO D3887-11 ONLY. INSTALL AN3C5A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241/-291.

REV.	DESCRIPTION	BY	DATE
B	ALS4-1032-130 WAS AELS-1032-130. ZN C4-1, C5-7, C3-7; ADD DT8931. ZN A8-1; ADD 134.04. ZN C4-8; D2855-3 WAS D2575 (ZN D4-1, C7-2, C2-2, C7-3, C2-3, C7-4, C2-4); AN3C5A WAS AN3C4A (ZN C6-2, C2-2, C6-3, C2-3, C6-4, C2-4)	RF	09.06.30
A	NEW ISSUE	RF	09.03.30

DESIGN	RF	**DART AEROSPACE USA, INC.** PORT HADLOCK, WA
DRAWN	RF	DRAWING NO. D3887 — REV. B — SHEET 1 OF 8
CHECKED	[signature]	
MFG. APPR.	[signature]	TITLE: A119 STD SKIDTUBE ASSY — SCALE NTS
APPROVED	[signature]	
DE APPR.	[signature]	
DATE	09.06.30	

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

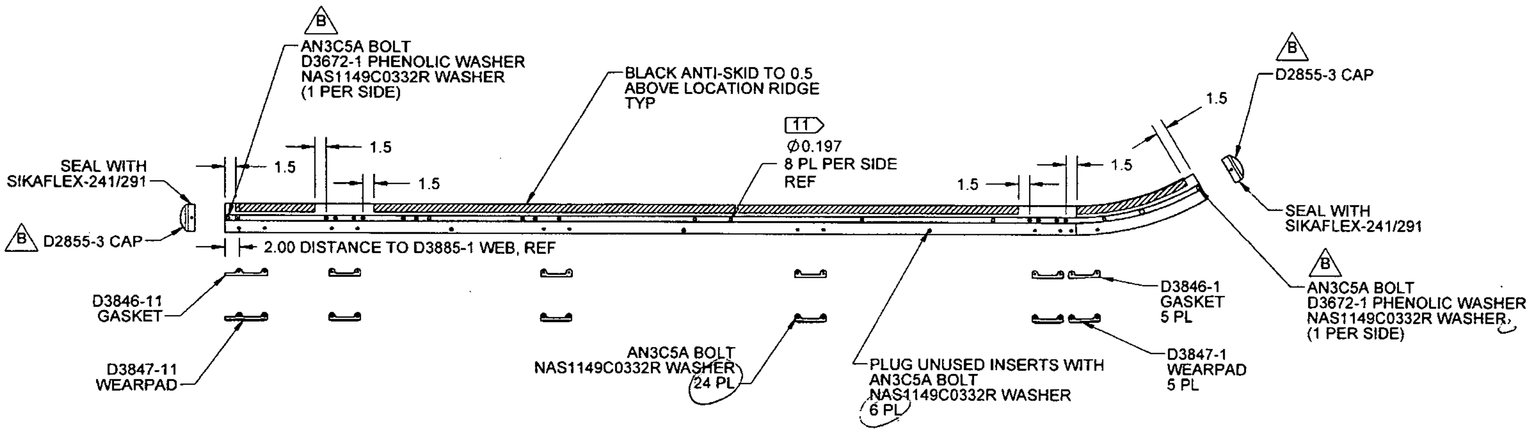
QA Closed: Date:

Work Order: ________	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
Part No. ________	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
NCR No. ________	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
	Work Order Update ☐	Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	____________	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	____________	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	____________	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		



D3887-041 STANDARD SKIDTUBE ASSY WITH WEARPAD
(MAKE FROM D3887-11)

#89035

RELEASED

DESIGN	RF	**DART AEROSPACE USA, INC.** PORT HADLOCK, WA
DRAWN	RF	
CHECKED		DRAWING NO. D3887 REV. B SHEET 2 OF 8
MFG. APPR.		
APPROVED		TITLE A119 STD SKIDTUBE ASSY SCALE NTS
DE APPR.		
DATE	09.06.30	

DQA: ________ Date: ______________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

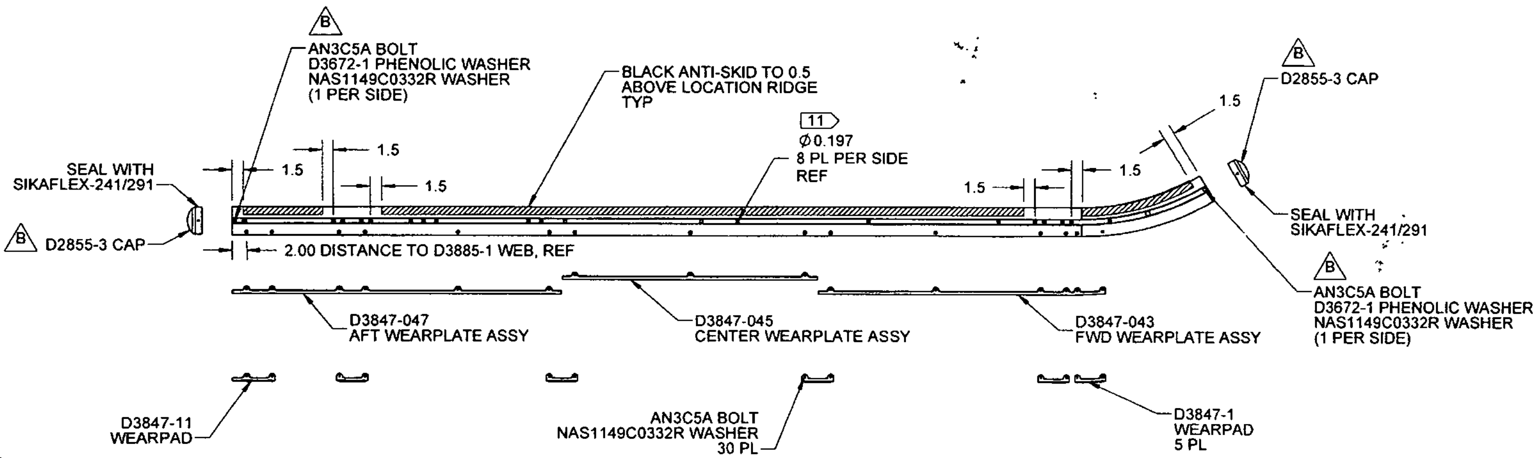
QA Closed: Date:

Work Order: ________	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
Part No. ________	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
NCR No. ________	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
	Work Order Update ☐	Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other ________
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	________	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	________	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	________	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		



#89035

D3887-043 STANDARD SKIDTUBE ASSY WITH WEARPLATE

(MAKE FROM D3887-11)

RELEASED 09/07/15

DESIGN	RF	DART AEROSPACE USA, INC. PORT HADLOCK, WA
DRAWN	RF	
CHECKED	[illegible]	DRAWING NO. D3887 REV. B SHEET 3 OF 8
MFG. APPR.	[illegible]	
APPROVED	[illegible]	TITLE A119 STD SKIDTUBE ASSY SCALE NTS
DE APPR.	[illegible]	
DATE	09.06.30	

DQA: ________ Date: ________________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

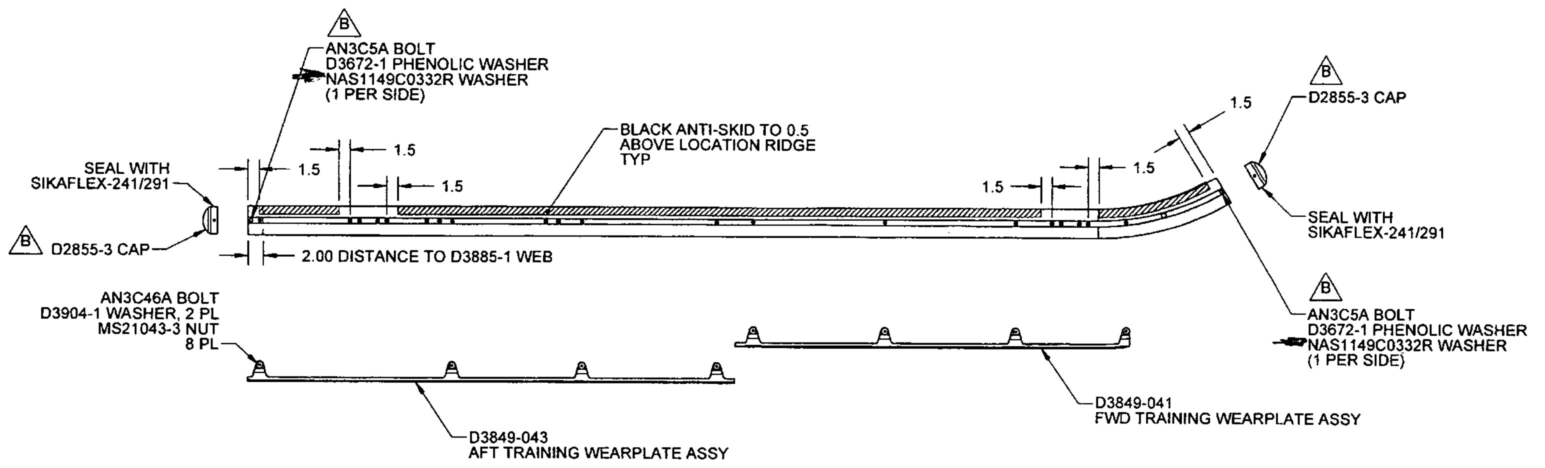
QA Closed: Date:

Work Order: ________ Part No. ________ NCR No. ________	**DISPOSITION** Rework ☐ Scrap ☐ Use-as-is ☐ Work Order Update ☐	**AGAINST DEPARTMENT/PROCESS** Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐ ☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other ________
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	________	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	________	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	________	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		



D3887-045 STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE

(MAKE FROM D3387-13)

#89035

RELEASED

DESIGN	RF	DART AEROSPACE USA, INC. PORT HADLOCK, WA
DRAWN	RF	
CHECKED		DRAWING NO. D3887 REV. B SHEET 4 OF 8
MFG. APPR.		
APPROVED		TITLE A119 STD SKIDTUBE ASSY SCALE NTS
DE APPR.		
DATE	09.06.30	

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

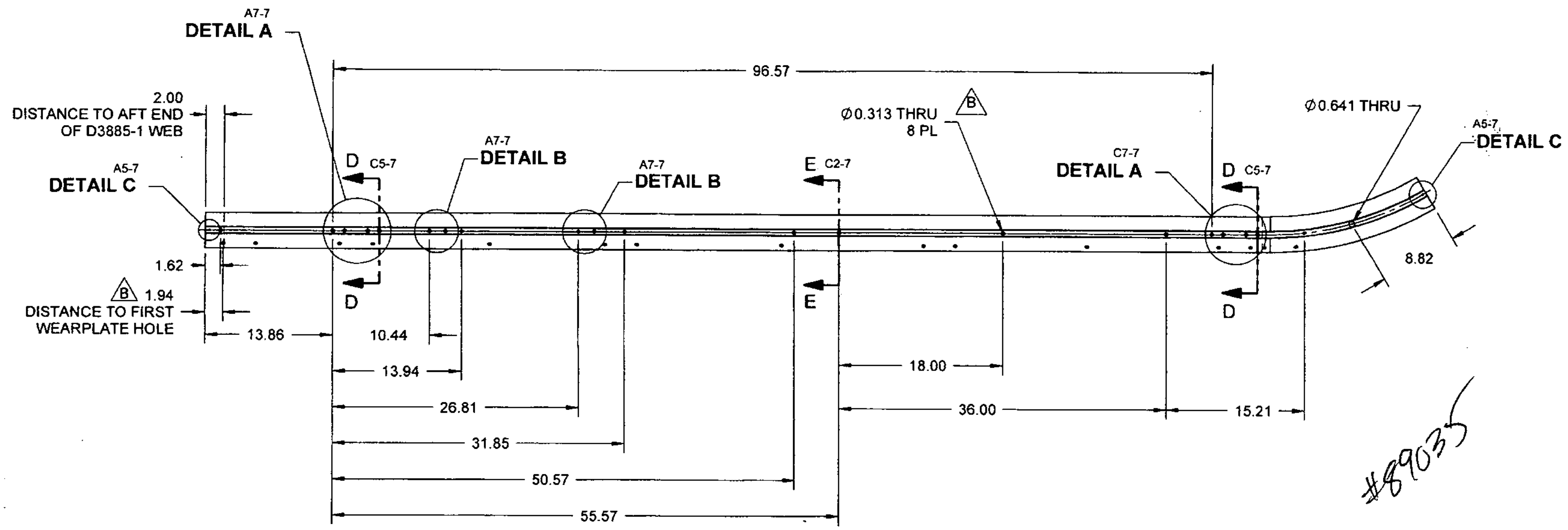
QA Closed: Date:

	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
Work Order: ____________	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
Part No. ____________	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
NCR No. ____________	Work Order Update ☐	Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped.	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other
☐ Ripples in Bend	☐ Drill Holes	☐ Offset		
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration		
☐ Turning Sequence	☐ Finish	☐ Out of Sequence		
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		



D3887-11 DRILLING DETAIL
(MAKE FROM D3887-1)

RELEASED 09/07/15

DESIGN	RF	DART AEROSPACE USA, INC. PORT HADLOCK, WA
DRAWN	RF	DRAWING NO. D3887 REV. B SHEET 5 OF 8
CHECKED		TITLE A119 STD SKIDTUBE ASSY SCALE NTS
MFG. APPR.		
APPROVED		
DE APPR.		
DATE	09.06.30	

DQA: ________ Date: ______________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

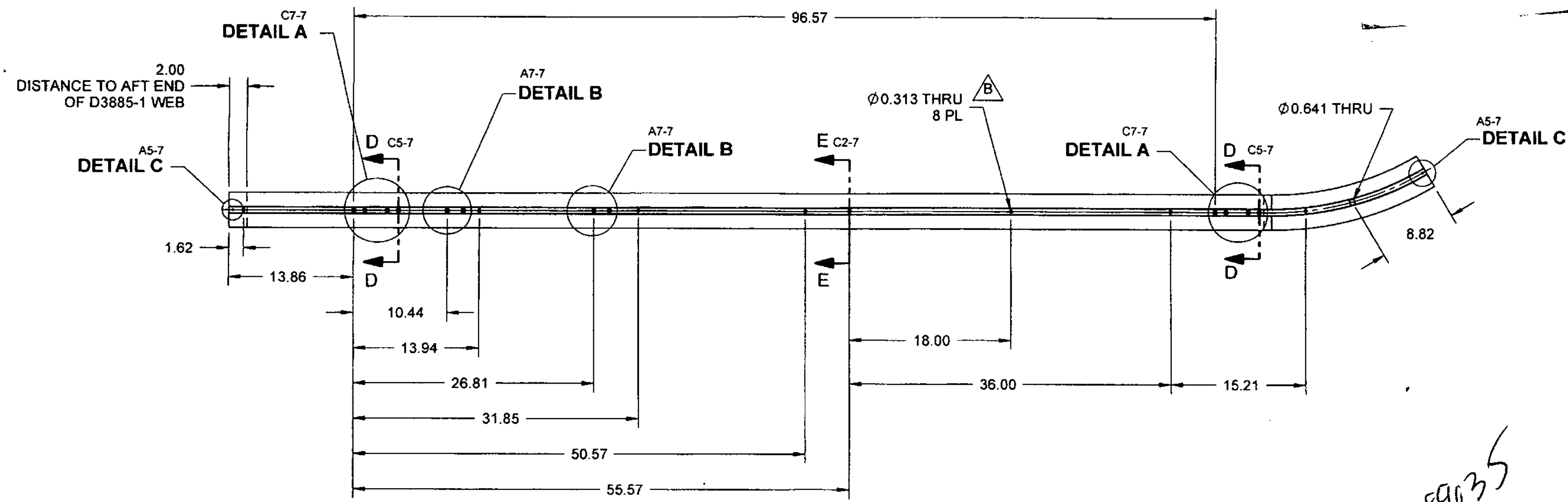
QA Closed: Date:

Work Order: ________	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
Part No. ________	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
NCR No. ________	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
	Work Order Update ☐	Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	________	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	________	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	________	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		



D3887-13 DRILLING DETAIL
(MAKE FROM D3887-1)

89035

RELEASED 09/06/15 [illegible]

DESIGN	RF	DART AEROSPACE USA, INC. PORT HADLOCK, WA
DRAWN	RF	
CHECKED	[signature]	DRAWING NO. D3887 REV. B SHEET 6 OF 8
MFG. APPR.	[signature]	
APPROVED	[signature]	TITLE A119 STD SKIDTUBE ASSY SCALE NTS
DE APPR.	[signature]	
DATE	09.06.30	

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ____________________

Part No. ____________________

NCR No. ____________________

DISPOSITION

- Rework ☐
- Scrap ☐
- Use-as-is ☐
- Work Order Update ☐

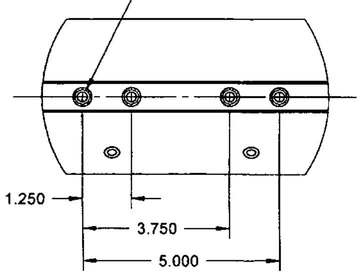
AGAINST DEPARTMENT/PROCESS

Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
Large Fab ☐	Composite ☐	Supplier ☐	☐

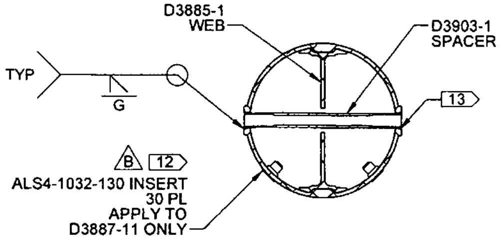
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other ________
☐ Ripples in Bend	☐ Drill Holes	☐ Offset		________
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration		________
☐ Turning Sequence	☐ Finish	☐ Out of Sequence		________
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

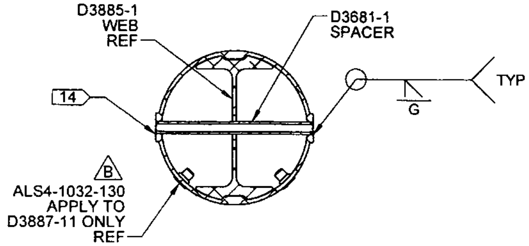


DETAIL A C3-5 D7-5 C3-6 D7-6
SCALE 4X



SECTION D-D C7-5 C3-5 C7-6 C2-6
SCALE 4X

(FOR 12 X Ø0.375 HOLES PER SKIDTUBE)



SECTION E-E C4-5 C4-6
SCALE 4X

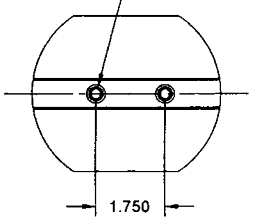
(FOR 8 X Ø0.313 HOLES PER SKIDTUBE) (B)

#89035

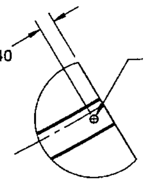
NOTES:

13) AFTER DRILLING AND BENDING ASSEMBLY PERFORM THE FOLLOWING FOR Ø0.375 HOLES ONLY:
- i) CHAMFER HOLES Ø0.475 x 45°
- ii) INSERT D3903-1 SPACER
- iii) WELD INTO PLACE AND GRIND FLUSH
- iv) C'BORE TO 0.313 x 0.75 DEEP
- v) DEBURR HOLES

(B) 14) AFTER DRILLING AND BENDING ASSEMBLY PERFORM THE FOLLOWING FOR Ø0.313 HOLES ONLY:
- (B) vi) CHAMFER HOLES Ø0.354 x 45° OR 0.050 DEEP x 45° (BOTH SIDES)
- vii) INSERT D3681-1 SPACER
- viii) WELD INTO PLACE AND GRIND FLUSH
- ix) DEBURR HOLES



DETAIL B C6-5 C5-5 C6-6 C5-6
SCALE 4X



DETAIL C C8-5 C1-5 C8-6 C1-6
TYPICAL
SCALE 4X

RELEASED 09/07/15

DESIGN	RF	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
DRAWN	RF		
CHECKED	[signature]	DRAWING NO. D3887	REV. B SHEET 7 OF 8
MFG. APPR.	[signature]		
APPROVED	[signature]	TITLE A119 STD SKIDTUBE ASSY	SCALE NTS
DE APPR.	[signature]		
DATE	09.06.30		

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

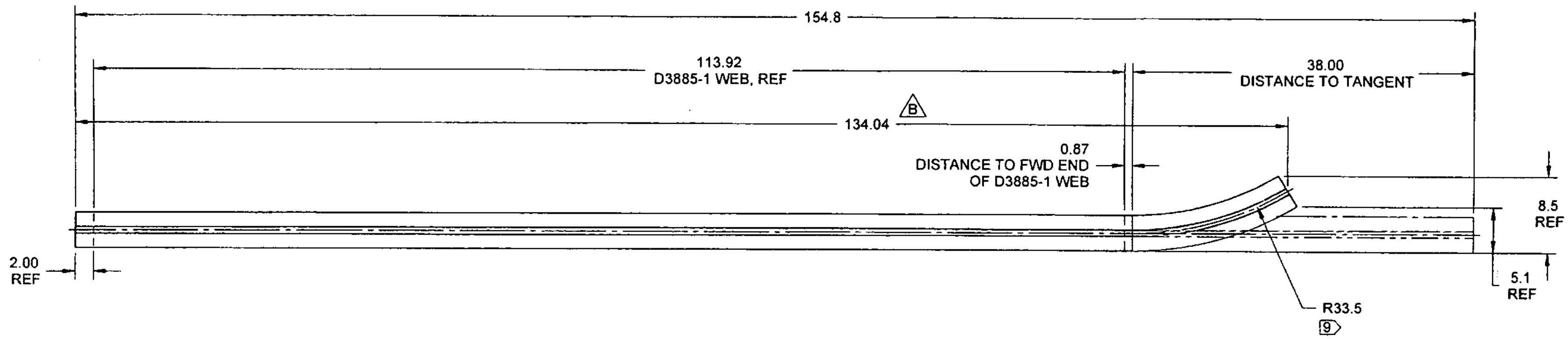
QA Closed: Date:

Work Order: ________ Part No. ________ NCR No. ________	**DISPOSITION** Rework ☐ Scrap ☐ Use-as-is ☐ Work Order Update ☐	**AGAINST DEPARTMENT/PROCESS** Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Crosstube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coor. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐ ☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	**General**			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	________	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	________	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	________	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		



D3887-1 BEND DETAIL
(MAKE FROM D2500-1-190 EXTRUSION)

89035

RELEASED 04/07/15

DESIGN	RF	**DART AEROSPACE USA, INC.** PORT HADLOCK, WA
DRAWN	RF	
CHECKED		DRAWING NO. D3887 REV. B SHEET 8 OF 8
MFG. APPR.		
APPROVED		TITLE A119 STD SKIDTUBE ASSY SCALE NTS
DE APPR.		
DATE	09.06.30	

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ____________	DISPOSITION	AGAINST DEPARTMENT/PROCESS
Part No. ____________	Rework ☐	Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
NCR No. ____________	Scrap ☐	Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
	Use-as-is ☐	Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
	Work Order Update ☐	Large Fab ☐ Composite ☐ Supplier ☐ ☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	____________	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	____________	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	____________	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

NO. 288

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 74794
Part number: D119-646-241
Description: Skid tube
Welding Process: Tig[✓] Mig[ ]
Base materiel: Alum.
Current: AC[✓] DC[ ]

TEST REQUIREMENTS AND RESULTS

Visual:	pass[✓]	fail[ ]
Penetration:	pass[✓]	fail[ ]

UNACCEPTABLE

Cracks:	pass[✓]	fail[ ]
Undercut:	pass[✓]	fail[ ]
Pin holes:	pass[✓]	fail[ ]
Overlap (cold lap)	pass[✓]	fail[ ]
Porosity (surface):	pass[✓]	fail[ ]
Coloration:	pass[✓]	fail[ ]

Qualifier [signature] **Date of Test Coupon** 12.04.16
Welder Barclay Elliott **Date of Test Coupon** 12-04-16

The above named individual is qualified in accordance with AWS D17.1.2001 to weld